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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,850	04/13/2001	Ulrich Zimmermann	113737.6	2752

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EXAMINER	
NAFF, DAVID M	
ART UNIT	PAPER NUMBER
1651	

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/762850	Zimmermann et al
Examiner	**Group Art Unit**
[illegible]	1651

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☒ Responsive to communication(s) filed on 1/22/03.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 29-42, 52+54 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 29-42, 52+54 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 11 filed 2/4/03

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

The amendment of 1/22/03 amended the specification and claims 29, 42 and 52, and added new claim 56.

Claims examined on the merits are 29-42, 52 and 56.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 29-42, 52 and 56 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amendment to step a of claim 29 is not adequately supported in the specification. The claim as amended requires extracting an algae material with a complex forming agent for providing a solution containing solved alginate. This appears to require a solution containing dissolved alginate to result using a complex forming agent for extraction. However, this is not disclosed in the specification.

Applicants have referred to page 7, paragraph 4, as providing support. However, this portion of the specification fails to support that using a complex forming agent alone causes the alginate to go into solution. In Example 1, page 13, lines 7-10, alginate material is

suspended in an EDTA solution. A suspension is not a solution. While commercial alginate is disclosed as being dissolved, this appears to result from the use of commercial soluble sodium alginate and not from the use of EDTA for extracting. Commercial alginate can be sodium alginate which will dissolve in water in the absence of EDTA.

The specification fails to support a mean molecular weight of mixed polymer greater than about 350 kD as required in claim 52, bridging lines 4 and 5. The specification (page 9, line 15) and original claim 16 (last line) disclose a mean molecular weight for the mixed polymer of greater than 250 kD.

Claim Rejections - 35 USC § 112

Claims 29-42, 52 and 56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are confusing and unclear by claim 29 reciting "extracting an algae material with a complex forming agent for providing a solution containing solved alginate".

This recitation is unclear as to whether a solution of alginate is being required to result from using a complex forming agent for extracting, and that the complex forming agent causes the solution to be formed. This function of the complex forming agent is not disclosed in the specification.

Claim Rejections - 35 USC § 103

Claims 29-42, 52 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmermann et al (DE 42 04 012 A1) or Klock et al (AP) for the type of reasons set forth in the previous office action of 10/22/02.

The claims are drawn to a process of producing purified alginate and to the resultant alginate. The process involves extracting algae with a complex forming agent to form a solution of the alginate, filtering, precipitating the alginate, collecting and dewatering, and repeating the steps at least once.

Zimmermann et al and Klock et al disclose essentially a process as claimed to produce purified alginate except that the claims require repeating the process steps at least once.

It would have been obvious to repeat the purification steps of Zimmermann et al or Klock et al since repeating the steps would have been expected to provide a more pure alginate. As to the use of a complex forming agent, Klock et al disclose (paragraph bridging pages 639 and 640), dissolving alginate in a strongly alkaline EDTA solution. This also appears to be disclosed in Zimmermann et al (col 3, lines 5-10, col 4, lines 10-12 and col 5, lines 65-68). As to claim 56 using of brown algae, this is a well known ready available algae, and Klock et al suggest (page 643, last line of second paragraph) using alginate from brown seaweed. The ratio of mannuronic acid to guluronic acid and mean molecular weight of claim 52 would have been inherent in Klock et al or Zimmermann et al. If not inherent, selecting such preferred conditions would have been obvious in view of Klock et al disclosing (page 643, 3rd

paragraph) that alginate with various ratios of mannuronic acid to guluronic acid can be used, and alginate with high mannuronic acid or high guluronic acid can be used.

Response to Arguments

Applicants urge that there is no motivation to use a complex-forming agent to solve the alginate into a solution. However, Klock et al disclose dissolving alginate beads in strongly alkaline EDTA (page 640, lines 1-5). Moreover, as noted above, the present specification fails to support that the use of a complex forming agent causes the alginate to go into solution. As noted above, in Example 1, a suspension of alginate is formed in an EDTA solution. Further note, that in Example 2 a suspension is formed and stirred. A suspension is not a solution. A solution is obtained when commercial alginate is used, and this appears to result from the alginate being sodium alginate which dissolves in water to form a solution in the absence of EDTA. While a solution is disclosed as being formed in lines 17-21 on page 13, this appears to result from the presence of Na_2CO_3 in combination with the EDTA to form sodium alginate and not the EDTA alone.

Applicants urge that it is known that alginate in raw plant material is bound with multivalent cations, and that in the present invention the complex forming agent binds the cations leaving the alginate as a soluble salt in true solution. However, raw alginate containing sufficient cations to prevent the alginate from going into solution is not supported by evidence. Even if this were the case, EDTA would simply remove the cations and leave alginate not containing sufficient sodium ions to make

the alginate soluble. It has not been established by evidence that raw alginate contains cations and sodium ions, and that removing the cations will leave soluble sodium alginate. To obtain sodium alginate when treating raw alginate with EDTA, the EDTA must be in an alkaline solution containing sodium ions as disclosed by Klock et al.

Applicants urge that Zimmermann et al and Klock et al use commercial alginate. However, the present claims do not exclude commercial alginate. Additionally, the claims do not require isolating alginate in a neutral solution as asserted by applicants. While barium alginate may be insoluble as asserted by applicants, Klock et al is using EDTA in an alkaline solution to remove barium ions, and the alkaline solution forms soluble sodium alginate when the barium ions are removed. There is inadequate evidence to establish that the present invention can treat raw plant alginate with only EDTA dissolved in water to provide a solution of alginate in only water in the absence of added sodium ions or other added ions that form soluble alginate.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 52 is rejected under 35 U.S.C. 102(b) as being anticipated by Balz et al (5,132,295).

The purified alginate obtained by Balz et al (Example 1) will inherently have a composition as required by the present claim.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is (703) 308-0520. The examiner can normally be reached on Monday-Thursday and every other Friday from about 8:30 AM to about 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, a message can be left on voice mail.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn, can be reached at telephone number (703) 308-4743.

The fax phone number is (703) 872-9306 before final rejection or (703) 872-9307 after final rejection.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

DMN
5/2/03

DAVID M. NAFF
PRIMARY EXAMINER
ART UNIT 1257